



COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION

Stephen C. Brich, P.E.
Commissioner

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November 21, 2022

MEMORANDUM

TO: Bart A. Thrasher, P. E.

FROM: James Ponticello

SUBJECT: Devlin Road widening from two to four lanes (Breakout Project)

PROJECT: 0621-076-310, C501, P101, R201
(UPC 118253)

In compliance with the Federal Noise Regulation, the State Noise Abatement Policy, and the Highway Traffic Noise Guidance Manual, a Final Design Noise Analysis was completed in conjunction with the project noted above. The Final Design Noise Analysis evaluated four noise barriers, and found all four noise barriers to meet the feasibility and reasonableness criteria. As required by the Highway Traffic Noise Guidance Manual, concurrence from the Chief Engineer is requested.

Barrier A (Recommended)

Barrier A was evaluated on the southbound side of Devlin Road along the right-of-way line south of Fog Light Way. The noise barrier is located in Common Noise Environment (CNE) A in the Final Design Noise Analysis, which consists of noise-sensitive residential exterior areas.

Barrier A would benefit all eight impacted noise sensitive receptors, as well as six additional non-impacted receptors. The barrier was designed to be 922 feet in length and would have an average height of 14 feet. The barrier would provide an average noise reduction of 8 decibels to the benefitted receptors.

Barrier A is considered feasible since it would provide at least 5 decibels of noise reduction to 50% or more of the impacted sites. The barrier also achieves the design goal since it provides at least 7 decibels of noise reduction to at least one of the impacted sites. The barrier is considered reasonable since it would have a surface area per benefitted receptor of 922 square feet, which is below the maximum criteria of 1,600 square feet per benefitted receptor; therefore the Noise Abatement Program Manager recommends construction of the noise barrier, pending an

affirmative vote of benefitted receptors. The results of the analysis are documented in the technical report.

Barrier B (Recommended)

Barrier B was evaluated on the southbound side of Devlin Road along the right-of-way line north of Fog Light Way. The noise barrier is located in CNE B in the Final Design Noise Analysis, which consists of noise-sensitive residential exterior areas.

Barrier B would benefit all 11 impacted noise sensitive receptors, as well as one additional non-impacted receptor. The barrier was designed to be 966 feet in length and would range in height from approximately 12 to 18 feet, and would have an average height of 13 feet. The barrier would provide an average noise reduction of 9 decibels to the benefitted receptors.

Barrier B is considered feasible since it would provide at least 5 decibels of noise reduction to 50% or more of the impacted sites. The barrier also achieves the design goal since it provides at least 7 decibels of noise reduction to at least one of the impacted sites. The barrier is considered reasonable since it would have a surface area per benefitted receptor of 1,069 square feet, which is below the maximum criteria of 1,600 square feet per benefitted receptor; therefore the Noise Abatement Program Manager recommends construction of the noise barrier, pending an affirmative vote of benefitted receptors. The results of the analysis are documented in the technical report.

Barriers E1 and E2 (Recommended)

Barriers E1 and E2 work as a barrier system; the barriers were evaluated on the northbound side of Devlin Road along the right-of-way line south of Pike Branch. The noise barrier system is located in CNE E in the Final Design Noise Analysis, which consists of noise-sensitive residential exterior areas.

Barriers E1 and E2 would benefit all 10 impacted noise sensitive receptors, as well as five additional non-impacted receptors. The barrier system was designed to be 1,261 feet in length and would have an average height of 10 feet. The barrier system would provide an average noise reduction of 9 decibels to the benefitted receptors.

Barriers E1 and E2 are considered feasible since they would provide at least 5 decibels of noise reduction to 50% or more of the impacted sites. The barrier system also achieves the design goal since it provides at least 7 decibels of noise reduction to at least one of the impacted sites. The barrier system is considered reasonable since it would have a surface area per benefitted receptor of 841 square feet, which is below the maximum criteria of 1,600 square feet per benefitted receptor; therefore the Noise Abatement Program Manager recommends construction of the noise barrier, pending an affirmative vote of benefitted receptors. The results of the analysis are documented in the technical report.

Barrier F (Recommended)

Barrier F was evaluated on the northbound side of Devlin Road along the right-of-way line north of Pike Branch. The noise barrier is located in CNE F in the Final Design Noise Analysis, which consists of noise-sensitive residential exterior areas.

Barrier F would benefit all five impacted noise sensitive receptors, as well as 13 additional non-impacted receptors. The barrier was designed to be 1,040 feet in length and would have an average height of 10 feet. The barrier would provide an average noise reduction of 7 decibels to the benefitted receptors.

Barrier F is considered feasible since it would provide at least 5 decibels of noise reduction to 50% or more of the impacted sites. The barrier also achieves the design goal since it provides at least 7 decibels of noise reduction to at least one of the impacted sites. The barrier is considered reasonable since it would have a surface area per benefitted receptor of 578 square feet, which is below the maximum criteria of 1,600 square feet per benefitted receptor; therefore the Noise Abatement Program Manager recommends construction of the noise barrier, pending an affirmative vote of benefitted receptors. The results of the analysis are documented in the technical report.

These recommendations are submitted for your approval. Should you have any questions, please contact Mr. James Ponticello at (804) 371-6769.

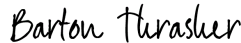


James Ponticello
Air Quality and Noise Program
Manager

Christopher J Swanson
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Chris Swanson, P.E
Environmental Division Director

Approved



Bart A. Thrasher, P. E.
Chief Engineer

Date

1/13/2023
